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**Rathi et al.**

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(54) **AUGMENTED AND/OR VIRTUAL REALITY FOOTWEAR**

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(57) **ABSTRACT**

A physical position of motorized footwear in a physical environment may be tracked, and movement of the footwear may be translated into corresponding movement in a virtual environment. When a distance between the motorized footwear and a boundary of an operational zone defined in the physical environment is less than or equal to a threshold distance, a motor of the motorized shoe may be actuated. Actuation of the motor may in turn actuate a locomotion device of the motorized footwear, to move the motorized footwear back into a return zone defined within the operational zone. This may allow the user to walk, seemingly endlessly in the virtual environment, while remaining within a defined physical space in the physical environment.

**20 Claims, 23 Drawing Sheets**

